NPS-AS-91-017

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POST-SERVICE EARNINGS OF VETERANS: EVIDENCE FROM THE RESERVES

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October 1991

Prepared for: Chief of Naval Personnel (OP-01)
Navy Annex
Washington, D. C. 20370

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Monterey, California

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The report was prepared for Chief of Naval Personnel (OP-01), Navy Annex, Washington, D. C.

This report was prepared by:

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave Blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	October 1991	Technical Report (Final)

4. TITLE AND SUBTITLE
Post-Service Earnings of Veterans:
Evidence From the Reserves

5. FUNDING NUMBERS
N0001491WR35031

6. AUTHOR(S)
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7. PERFORMING ORGANIZATION NAMES(S) AND ADDRESS(ES)
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Monterey, Ca. 93943

8. PERFORMING ORGANIZATION REPORT NUMBER
NPS-AS-91-017

9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES)
Chief of Naval Personnel (OP-01), Navay Annex,
Washington, D. C. 20370

10. SPONSORING/MONITORING AGENCY REPORT NUMBER
N/A

11. SUPPLEMENTARY NOTES

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; Distribution Unlimited

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*

This research analyzes the post-military earnings experiences of veterans from the all-volunteer force era. The 1986 DOD Reserve Components Survey is used to control for sources of bias associated with sample selectivity. Log-earnings equations are estimated to examine the effect of veteran status, branch of service, and skill transfer from the military to the civilian sector. In addition, wage differences by race and veteran status are estimated. Finally, wage profiles are estimated for veterans based on the number of years they have spent in the civilian labor force.

14. SUBJECT TERMS
Veterans; Post-military earnings; log-earnings models

15. NUMBER OF PAGES
32

16. PRICE CODE
N/A

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

NSN 7540-01-280-5500

Standard Form 298 (Rev 2-89)
Prescribed by ANSI Std 23908
298-102

POST-SERVICE EARNINGS OF VETERANS:

EVIDENCE FROM THE RESERVES

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*The author would like to thank Mark Eitelberg, Paul Hogan, and Linda Gorman for helpful comments and Carolyn J. Miller for computing assistance. The views expressed are solely those of the author and do not represent the official position of any agency of the U.S. Government.

Post-Service Earnings of Veterans: Evidence From the Reserves

I. INTRODUCTION

The population of veterans in the U.S. in 1986 was estimated to be 27.6 million (U.S. Bureau of the Census, 1989). This stock is augmented every year by approximately 300,000 enlisted members of the armed forces who leave active duty and reenter civilian life, most after serving only one tour of duty. Although numerous previous studies have analyzed the civilian labor market experiences of veterans, most have concentrated on cohorts from conscription periods, especially the Vietnam War. In contrast, although the All-Volunteer Force (AVF) era began nearly two decades ago in 1973, research on the experiences of veterans from this era has been limited. The impact of military service on today's self-selected volunteers may be entirely different from the effects observed for the drafted or draft-motivated veterans of earlier eras.

Empirical results from the handful of recent studies of volunteers have produced inconsistent conclusions, despite the fact that the studies have relied almost exclusively on a single data source -- the National Longitudinal Survey, Youth Cohort (NLS). Because of the importance of the policy issues associated with the transition of youth from school to the military or to the civilian work force, it is crucial that alternative data sets be explored. In this regard, Richard Freeman's comments concerning empirical research in labor economics

are especially appropriate:

> " . . . any 'finding' ought to be replicated on several data sets and under alternative 'plausible' model specifications before one accepts it as valid . . . In economics, it is the cumulation of disparate lines of evidence . . . that is compelling." (1989, p. x)

The present study examines one such alternative data source -- the Department of Defense's 1986 Reserve Components Survey (Research Triangle Institute, 1987) -- in an effort to identify the effect of a tour of military duty on post-service earnings. The data refer to male reservists, rather than a random sample of the population. However, the numerous advantages associated with the sample, including a partial control for the self-selection bias associated with military enlistment, should make it possible to extrapolate the results of the study to the population at large. The Reserve Components Survey provides extensive information on individual military background, and permits an examination of several hypothesized effects of military service that have appeared in the prior literature, but that have not been extensively investigated for AVF veterans.

I. BACKGROUND

Although empirical research on veterans from pre-AVF eras is extensive, it has failed to produce a consensus concerning the post-service earnings effect of military service.[1] Given the sparse literature on AVF-era veterans, it is not surprising a consensus also has failed to emerge for current veterans. Bryant and Wilhite (1990) decomposed veterans' military backgrounds into several components: time spent in the military, time spent in

[1] See Mangum and Ball (1989) for a brief survey of the literature.

formal training, occupational specialty, and branch of service. On the basis of interaction terms for branch and length of service and for branch and training time, time spent in the Army, Marine Corps, and Navy displayed negative effects on civilian earnings. On the other hand, formal training received in the Navy and Air Force was positively correlated with civilian earnings.

Despite several innovations in the Bryant-Wilhite study, several questions can be raised about their approach. For example, the authors are silent on the definition of the variable used to measure time spent in military training. Because the mean value of the training variable is very low (1.78 months), it is not clear whether the variable relects all training time, including basic training, or advanced training only. No matter what the intent was in creating this variable, it probably understates the actual level of advanced training.[2] Also, the amount of time spent in training should have been deducted from the military tenure variable in order to estimate the effect of military tenure net of time spent in training.

Mangum and Ball (1987) compared the probability of skill transfer for individuals with military training versus those with civilian training. The authors found that nearly one-half of those who received military training transferred their skills to a civilian job, and that the probability of transfer tended to be greater for more technical military occupational specialties (MOS). In a second study (1989), the same authors examined the civilian wage

[2]In the Army, all enlistees, even those in the infantry, receive advanced training. In the other branches, only some members receive advanced training, but their training period can be lengthy.

effects of skill transfer, type and provider of training, and veteran status. Even though they confirmed that earnings were higher when military-acquired skills were transferred to civilian jobs, their overall results were mixed and in some cases counterintuitive. For example, they found no significant wage effects from civilian apprenticeship and employer-provided training programs, even though such training has a very high transfer rate. A second surprising finding was that measures of veteran status were seldom statistically significant.

Andrisani and Daymont (1986) used two different NLS surveys -- the Youth and the Young Men cohorts -- to distinguish the short- from the long-run effects of military service. Earnings profiles were estimated for veterans and nonveterans based on the time elapsed since leaving high school and since discharge from the military. They concluded that veterans experience a significant earnings drop in the year they exit the military, but have higher earnings growth rates than nonveterans and overtake their peers two-to-three years after discharge. Unfortunately, the estimated coefficients on which their conclusions were based often were not statistically significant.

These studies have improved our understanding of the linkages between the military background of AVF veterans and their post-service earnings. However, several unresolved issues remain. One issue is associated with the use of the NLS by all of the studies reviewed above. The small samples of veterans in the NLS have made it difficult to adequately

decompose each person's military background.[3] A second problem is that the sample of veterans in the NLS is still relatively young; often, they have not been in the civilian labor force long enough to have completed valuable human capital investments -- such as further education or migration -- that would enable them to catch up to their nonveteran counterparts. Other surveys with large samples of veterans (the Current Population Survey or the decennial census) suffer from a lack of information on military background. To counter these problems, the present study provides results from a survey that combines the advantages of a large sample of veterans with information on each respondent's prior military history.[4]

III. DATA AND SAMPLE

The 1986 Reserve Components Survey (RCS) sampled 60,120 members of the selected reserve.[5] Reservists are "citizen-soldiers," who, for training purposes, normally drill one weekend per month and two weeks during the summer. The vast majority of reservists hold full-time civilian jobs: they are essentially civilians with a part-time military affiliation. What makes the RCS especially attractive for the purposes of the present study is that respondents were divided between those who had served on active duty prior to entering the reserves (and returning to civilian life), and those who had not; that is, some reservists are

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[3] Due to small samples, Bryant and Wilhite were unable to estimate the wage effect of the interaction between branch of service and MOS due to the large number of cells with zero observations (p. 79).

[4]The methodology used by Goldberg and Warner (1987) of matching veterans with Social Security Administration earnings information has not been applied to AVF veterans. Although their approach yields a large sample of veterans, only grouped earnings data can be used.

[5] The membership of the selected reserve components in 1986 numbered 1.1 million. (Department of Defense, 1989).

veterans, and some are not. In addition to providing a large sample of veterans with reported civilian earnings, the RCS also clearly identifies officers and enlisted personnel. Some previous studies have inadvertently combined officer and enlisted personnel,[6] even though the two groups are likely to display vastly different post-service earnings patterns. Similarly, the RCS does not mix draftees (or draft-motivated individuals) and true volunteers, which also may have biased many draft-era studies.

Selection bias has been addressed directly in only a handful of prior studies.[7] Self-selection occurs because enlistees have chosen the military over other alternatives; in addition, veterans represent enlistees who have chosen to leave the military at the expiration of their term of service. Both of these choices may hinge on unobserved characteristics. Censoring also occurs because veterans must meet stringent physical and mental standards to be admitted to the military or to be eligible for reenlistment. If the factors that explain why some individuals become veterans -- i.e., the enlistment and reenlistment decisions -- are also correlated with earnings, then self-selection may bias estimates of veteran status on civilian post-service earnings.

The sample of reservists from the RCS provides a partial control for the heterogeneity that can bias earnings studies. First, since entrance standards for the reserve

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[6]Studies using individual data from the decennial census (e.g., Berger and Hirsch, 1983; 1985) or the Current Population Survey have no way of distinguishing between veterans who were officers and those who were enlisted because information on rank is not available in the data.

[7]See, for example, Angrist (1989; 1990) and Trost and Warner (1979).

and active components are essentially the same, both the veterans and nonveterans in the sample are qualified for active military duty; that is, the sample of reservists eliminates non-randomness arising from the application of military entrance standards to the youth population.[8] A second source of selection bias is addressed because all survey respondents have a positive taste for military service; some have exercised it by joining the reserves, others by originally serving on active duty. Thus, to some extent the sample controls for unobserved taste differences between veterans and nonveterans that may have clouded the interpretation of previous studies.[9]

An opposite concern can be raised that the homogeneity of the sample of reservists introduces other biases that might blur differences between veterans and nonveterans. The basis for this concern is that all reservists receive the same basic training regardless of whether they originally enlist for active duty or for the reserves. Furthermore, many Army enlistees (both active and reserve) receive the same advanced individual training. Nonetheless, these similarities are unlikely to bias the proposed comparisons of reservist-

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[8] Aggregate data for this period indicate that the distribution of scores on the Armed Forces Qualifying Test (AFQT) reservist-veterans were the same as those for reservist-nonveterans (Office of Assistant Secretary of Defense, 1987).

[9] Note that self-selection is only partially controlled because, despite having similar tastes for the military, some differences remain: "reservist-veterans" accepted a full-time military life style, whereas "reservist-nonveterans" chose a part-time military association that involved less disruption to their normal civilian lifestyle. Indeed, economists have often treated serving in the reserves as simply a form of moonlighting (Mehay, 1991). Thus, some taste differences remain unaccounted for. Although selection problems may remain, the necessary data to apply a standard selectivity adjustment technique are not available in the RCS. Specifically, very little information is available on respondents' characteristics when they entered active duty, thus we cannot predict veteran status other than by the use of current characteristics. In addition, we have no information that would allow us to predict why some individuals remained on active duty and others chose to leave.

veterans and reservist-nonveterans. After only two, or at most four, months of training on active duty, reservists return to their home communities and civilian jobs, while active duty members deploy on operational, often overseas, tours. Also, active duty members work full-time at their occupational specialties and receive extensive on-the-job, as well as additional formal training. In contrast, reservists receive only a limited amount of training time each year, roughly one-tenth what the regular armed forces receive. Even after several years of service, reservists often still are not fully qualified in their occupational specialties (GAO, 1988).

Thus, although differences between reservist-veterans and reservist-nonveterans are not as sharp as those between veterans and nonveterans in the civilian (non-reserve) population, the remaining differences should permit a clear test of the impact of a tour of active military duty. The factors that civilian employers are likely to perceive and evaluate are all a function of service on active duty, not in the reserves. These factors include the lengthy absence from the civilian work force, receipt of formal and on-the-job technical training, receipt of general work skills, and satisfactory completion of one's contracted military enlistment period.

Several restrictions were imposed on the original sample of reservists: women were omitted due to demand constraints on their enlistment in both the active and reserve components. Respondents who were Coast Guard reservists, officers, full-time students, currently unemployed, or working part-time also were deleted. To ensure that individuals

were compared at similar points in their civilian careers, reservist-veterans were restricted to those with six years or less of active duty. This restriction allows us to test the impact of military service for the vast majority of volunteers who leave the military after one tour, or at most two tours, of active duty. To minimize coding or response errors in the earnings variable, we made use of the fact that the RCS reports two different earnings measures -- annual income and weekly earnings. Observations showing a gross inconsistency between these two measures were eliminated, as were observations with missing or implausible values for any of the variables used in the analysis. These restrictions resulted in a usable sample of 23,484 observations, of whom 44.6 percent were veterans.

The approach used involves estimating standard Mincer-type earnings functions. Variables that capture general human capital include years of education (EDUC), potential work force experience (EXP), and potential experience squared (EXP2). Because the RCS provided no information on tenure in the current job we were unable to include a firm-specific human capital variable. Current labor force status was reflected in dummy variables for self-employment (SELF), and for occupation and industry of employment (using one-digit census codes). Finally, as is typical in human capital studies, demographic variables representing race (NONWHITE = 1), marital status (MARRIED = 1), and number of children (CHILD) were also included in the specification.[10] Descriptions and means of the variables used in the earnings models are shown in Table 1.

[10]One important measure often used to control for ability differences is the individual's score on the Armed Forces Qualification Test (AFQT); unfortunately, AFQT scores were not collected in the RCS.

Table 1 indicates that the mean weekly earnings and annual income of veterans surpassed that of nonveterans by rather sizeable amounts: 13.3 percent and 16.2 percent, respectively. This difference confirms what has been found in other tabulations of income by veteran status (VA, 1984). However, these differences virtually disappear below in the estimated regression models that control for the differences in the characteristics of the two groups: namely, veterans are somewhat older, have more labor market experience and education, and are more likely to be married than nonveterans.

One unique aspect of the RCS is that 46 percent of the veterans served in the Army. This percentage exceeds the fraction of the active force -- 36 percent in 1986 -- serving in the U.S. Army (U.S. Census Bureau, 1989) and, therefore, likely exceeds the proportion of Army veterans in the population.[11] The high percentage of Army veterans in the RCS is due to the disproportionate distribution of reserve units (and manpower) to the two Army reserve components, the National Guard and U.S. Army Reserve, which in 1986 accounted for two-thirds of total selected reserve manpower (Department of Defense, 1989).[12]

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[11] Army veterans also accounted for 50 percent of the sample of veterans drawn from the NLS in the Bryant and Wilhite (1990).

[12]The reason the proportion of Army veterans in the RCS is less than the fraction of reserve manpower in the Army reserve components is that the Naval Reserve and Air Force Reserve enlist a higher proportion of prior service personnel (veterans) than the Army reserve components.

III. EMPIRICAL RESULTS

A. *Effects of Veteran Status and Branch of Service*

Despite numerous differences between the RCS and NLS, the results in Table 2 are reasonably consistent with earlier studies based on the NLS: the return (in annual earnings) to schooling and experience, and the effect of minority and marital status are very similar to recent NLS wage studies (Low and Ormiston, 1991; Mangum and Ball, 1989). The coefficients on the minority and marital status variables in the annual income equation are nearly double their size in the weekly earnings equation. This difference may be traced to differences in the annual work hours of married and nonwhite men.

The negative coefficient on the veteran status variable is consistent with Bryant and Wilhite and Daymont and Andrisani, but conflicts with Mangum and Ball. The magnitude of the coefficient, however, is small and just significant at the 7 percent level, two-tailed test. On the basis of this regression, one would conclude that the difference between the earnings of male veterans and non-veterans is slight. Futhermore, columns 2 and 3 in Table 2 analyze the effect of military service by branch and indicate that the negative effect of military service is associated primarily with the Army. In contrast, Navy, Air Force, and Marine Corps veterans earn 2 to 4 percent more than their counterparts.[13] Again, the size of these effects are larger in the annual earnings equation. The coefficients of the branch variables reveal the average return to both the specific and general skills received in the

[13]Percentage effects are calculated from $\exp(\beta)$-1. These branch effects differ from Bryant and Wilhite who found negative effects of military tenure for all branches (but positive wage effects for training received in the Navy and Air Force).

service branches. Thus, it is plausible to interpret the observed positive effect of service in the Navy and Air Force as attributable to the high proportion of technical specialities in those branches, and the negative effect of Army service as due to its high proportion of combat arms specialties. The training and skills required for Navy and Air Force occupations may be more marketable, on the average, than the training received in the Army. Yet, that argument does not explain the positive effect of a tour in the Marine Corps, which is also dominated by combat-related specialties. An alternative explanation for the success of Marine Corps veterans is that enlistment standards may be stricter (or more strictly enforced) by the Marine Corps.

B. Occupational Transfer Effects

The impact of military training and the transfer of military skills to civilian jobs has been a central issue in AVF-era studies. Studies have found that the ability to transfer military skills to civilian employment is a major factor augmenting civilian earnings (Mangum and Ball, 1989). This finding is not surprising: service leavers who transfer their skills to the civilian sector change employers but not occupations; leavers who do not transfer skills change both employers and occupations. It is worth noting that among young civilian workers, occupational switching is nearly as common as employer switching. An analysis of the National Longitudinal Survey of Young Men found that, for each of several two-year periods, 54 percent of the sample on average changed their 3-digit occupation code, and 41 percent changed their 1-digit occupation (Shaw, 1984).

Those who change both employers and occupations lose both employer-specific human capital as well as more general occupation-specific investments; as a consequence, they often experience discontinuities in their income growth patterns. Shaw (1984) demonstrates that investments in occupational skills have a much greater effect on earnings than employer-specific skills acquired via firm tenure. This suggests that those who change occupations during a job switch will experience a greater earnings disruption, at least in the short-run, than those who maintain their occupation when switching employers.[14] Veterans may be no different than civilians in this regard: leaving the military may simply be a part of the pattern of job switching behavior exhibited by young civilian workers, with similar effects. Any negative effects of veterans' shorter civilian job tenure are likely to be outweighed by whether they transfer their occupation-specific investments: veterans who transfer their occupational investments will fare better than those who do not.

In the present study, veterans are defined as having transferred their military occupations if: (a) they respond on the RCS that their reserve and civilian jobs are "similar," and (b) their occupational specialty in the reserves is the same as it was in the active military. This definition omits cases in which individuals transfer their military training to a civilian job that differs from their active duty job, but which nonetheless utilizes some of their military skills. These omissions are acceptable because they involve the transfer of selected skills rather than of an entire occupation. However, the definition may also omit some legitimate occupational transfers: namely, those in which reserve and military jobs

[14]For other evidence on the impact of changing employers and occupations on wages see Kiker and Roberts (1984).

differ, but in which civilian and military jobs are the same. In those cases, the definition understates the true amount of occupational transfer. Unfortunately, no information was available in the RCS on the individual's active duty occupational specialty.

Of the veterans in the RCS, 12.3 percent transferred their military occupation to the civilian sector. This compares to the roughly one-half of veterans who have responded on surveys that military training helped qualify them for a civilian job, and the one-third of veterans in the NLS with matching military and civilian occupations (Mangum and Ball, 1989). The occupational transfer rate in the RCS sample was the highest for the Navy (20.7 percent), followed by the Air Force (14.1 percent), Marine Corps (9.4 percent), and the Army (8.8 percent). The low proportion of Army veterans who transfer military specialties is not surprising since the Army reserve components, especially the National Guard, are dominated by combat arms units, which enlist a high percentage of personnel with no prior military service. The Naval Reserve, in contrast, enlists many prior service personnel (veterans) with technical backgrounds.

The wage effects of occupational transfer are reported in Table 3. In column 1 the coefficient of TRANSFER indicates that occupational transfer yields a return of 5.1 percent, a somewhat smaller premium than that estimated by Mangum and Ball. The coefficient of veteran status, which now represents the independent effect of changing employers, is still negative and significant, and indicates an immediate income loss of 2 percent upon exiting the military.

The specification in Table 3 also includes the number of years since discharge (YRSOUT) and its square (YRSOUT2) to measure one's post-military civilian experience. When the years-since-discharge variable is included in the regression analysis, the partial effect of veteran status becomes insignificant. This suggests that the small veterans earnings penalty is associated with the lack of civilian job experience, rather than a direct result of military service. Even so, the small penalty is offset rather quickly. Other things the same, the earnings of veterans are 4.2 percent higher than nonveterans after only one year in the civilian labor market and 9.2 percent higher after just two years.[15] Although the rise in the earnings of veterans with time in the civilian labor market is at a decreasing rate, the rate of decline is relatively slow. That the earnings growth of AVF veterans exceeds that of nonveterans suggests that veterans may be more able, more work motivated, or receive more general training in the military than is commonly believed. These attributes quickly offset whatever earnings disadvantage they may encounter from having less knowledge of the civilian job market, or from employers' inability to evaluate their military backgrounds.[16]

In column 3 interaction terms between TRANSFER and branch of service are used to evaluate the differential impact of occupational transferability across branches. The coefficients of the interaction terms for the Navy, Air Force, and Marine Corps indicate that

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[15]The partial effect of veteran status is calculated from: $\partial(ENGS)/\partial(VET) = -.01 + .053\ (YRSOUT) - .0009\ (YRSOUT)^2$. The time pattern of veterans' earnings is almost identical to that observed by Mangum and Ball who found that "within two years of their return to civilian life, those who served in the armed forces enjoyed higher earnings than those who received training in the civilian sector. " (p. 244).

[16]The Department of Defense recently has begun to issue documents to veterans that verify their military experience, training, and education in an effort to improve potential employers' knowledge of veterans'military backgrounds (Navy Times, 26 August 1991, p. 4).

the effectiveness of occupational transfer is between 10 and 13 percent for those branches. In contrast, Army veterans who transfer occupations to the civilian sector earn about 7 percent less. Thus, the negative effect associated with Army-specific skills and training is not mitigated by the ability of Army veterans to transfer their occupations to the civilian sector. The coefficient of the Army-transfer interaction term in Table 3 has roughly the same size as the Army dummy variable in Table 2. This relationship does not apply to the other branch interactions and suggests that underreporting of occupational transfer may be greater for Army veterans. It also suggests that the coefficient of the interaction term may simply be picking up the negative return to Army-specific skills rather than the true return to occupational transfer.

B. *Differences in Veterans' Earnings by Race*

The issue of minority representation in the armed forces is as heatedly debated today as it was during the Vietnam War. In 1989, racial and ethnic minorities accounted for 29 percent of the enlisted force, roughly twice the percentage in the civilian population. (OASD, 1990). Despite the importance of this issue, the differential impact of military service for nonwhites has not been analyzed for AVF veterans. A traditional view has been that for nonwhites the military is a more effective means to make the transition from school to the civilian work force (the "bridging" hypothesis). To examine this hypothesis, Table 4 reestimates the annual income model separately for whites and nonwhites. Although not strictly comparable to earlier studies that have examined veterans' earnings differences by race, the results tend to be consistent with those studies.

Veteran status displays a dramatic difference in the income effect for whites and nonwhites in columns 1 and 2 of Table 4; for whites, annual income is negatively and significantly associated with veteran status, but for nonwhites veteran status has an insignificant effect. In columns 3 and 4, both whites and nonwhites suffer an earnings penalty from service in the Army, but only nonwhites reap the gains from service in the Navy, Air Force, and Marine Corps. In contrast, for whites the coefficients for the three non-Army branches are statistically insignificant.

A Chow-test of differences in the regression coefficients between whites and nonwhites rejected the null hypothesis of identical coefficients.[17] Thus, Tables 5 and 6 provide separate estimates of the effects of occupational transfer for nonwhites and whites. The positive impact of occupational transfer found above in Table 3 appears to be confined to white veterans. The coefficient of TRANSFER indicates that transferring occupations generates a premium of 7.4 percent for white veterans, but displays no effect for nonwhites. The largest effect occurs for white Navy veterans, who receive a premium of 14.1 percent. Among nonwhites, income gains are observed only for Air Force veterans who transfer skills. For both whites and nonwhites, Army veterans who transfer skills earn less. The coefficient of the transfer-branch interaction term for Marine Corps veterans is insignificant for both racial groups.

[17]The computed F-value of 2.01 exceeded the critical F-value (at the 1 percent level) of 1.79.

IV. SUMMARY AND CONCLUSIONS

This study utilized the Reserve Components Survey of 1986, a unique source of information on veterans and nonveterans, to analyze the post-service earnings impact of military service for post-Vietnam, AVF-era enlistees. This data source has the distinct advantage of controlling for some of the heterogeneity between veterans and nonveterans that may have introduced biases in earlier studies. The second advantage of the RCS was that it provided a large sample of veterans who had completed a short tour of military duty before reentering civilian life.

The empirical results reveal a small earnings penalty associated with veteran status. The earnings penalty is not unexpected since veterans are comparable to other young civilian workers who switch employers and lose employer-specific training. This comparison is less appropriate, however, if there are differences in occupational switching between the two groups. If, for example, veterans are more likely to switch (i.e., less likely to transfer) occupations when they change employers, they will be more likely to lose general human capital and to suffer more serious income discontinuities compared to civilian job changers. The observed earnings penalty, however, is short-lived; also, veterans reveal steeper earnings growth than nonveterans.[18] On average, veterans catch up to their nonveteran counterparts

[18]Willis and Rosen (1979) provide support for the hypothesis that people select themselves into observed groups based on the principle of comparative advantage: they select the option with the largest expected present value. Evidence to support this behavior in the present study is difficult to obtain due to the lack of data to estimate the probit selection methods commonly used. Moreover, if we compare two options for high school graduates -- college versus the military, say -- then the correct test is to compare the earnings of those who chose the military with what they would have recieved had they chosen college instead, and to then compare this difference with what college attendees would have earned had they chosen the military instead. The data for such a test are unavailable. Nonetheless, it is worth noting that the military pay of armed forces members during their first tour of duty often exceeds the entry-level pay of their civilian

within 1 to 2 years after exiting the military, although the required period is somewhat longer for Army veterans.

The small post-military earnings penalty observed for veterans also masks significant differences based on branch of service, extent of occupational transfer, and race. The penalty is strongly associated with only one military branch -- the Army. Service in the other branches appears to augment post-service earnings capacities. Further, individuals who exit the military but are able to transfer their military occupational specialty to the civilian sector garnered a significant earnings premium over otherwise comparable nonveterans and other veterans. In general, nonwhites appear to reap the largest benefit from military service, especially from service in the Navy, Air Force, or Marine Corps. Despite significant improvements in the civilian labor force status and earnings of minorities, the military still appears to offer differential economic benefits to minority groups. However, white veterans appear to benefit more than nonwhite veterans from occupational transfer. Among the branches, the largest wage premium is earnged by white Navy veterans who are able to transfer occupations to the civilian sector.

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counterparts (or what the members themselves could have earned had they not entered the military). After weighing the monetary value of veterans' benefits, such as the G.I. Bill, the present value of the military option may far outweigh the alternatives.

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Table 1

Variable Names, Descriptions, and Means

Name	Description	Means		
		All	Veterans	Non-Veterans
WEEK	Weekly earnings ($)	481	512	456
ANNUAL	Annual income ($)	23,717	25,712	22,110
EXP	Years of potential experience	15.09	17.71	12.69
EXP2	EXP squared	307.76	374.87	245.40
AGE	Age in years	34.16	37.05	31.80
NONWHITE	= 1 if nonwhite	.23	.26	.21
MARRIED	= 1 if married	.71	.78	.65
CHILD	Number of dependents	1.51	1.77	1.31
EDUC	Years of education	13.07	13.33	12.86
SELF	= 1 if self-employed	.04	.04	.04
VET	= 1 if active duty service	.44	--	--
ARMY	= 1 if Army veteran	.22	.49	--
NAVY	= 1 if Navy veteran	.09	.21	--
USAF	= 1 if Air Force veteran	.09	.20	--
USMC	= 1 if Marine Corps veteran	.04	.10	--
TRANSFER	= 1 if skill transfer	.07	.12	--
Sample Size		23,484	10,476	13,008

Table 2

Regression Estimates Explaining Log of Weekly Earnings (WEEK) and Log of Annual Earnings (ANNUAL)[a]

Explanatory Variable	Dependent Variables			
	1. WEEK	2. WEEK	3. ANNUAL	4. ANNUAL
CHILD	.018	.019	.015	.015
	(6.48)	(6.69)	(5.02)	(5.24)
EDUC	.052	.052	.059	.059
	(25.56)	(25.34)	(27.11)	(26.85)
EXP	.038	.038	.055	.055
	(25.03)	(25.09)	(34.14)	(34.25)
EXP2	-.0005	-.0005	-.0009	-.0009
	(14.63)	(14.62)	(21.06)	(21.08)
MARRIED	.045	.045	.094	.094
	(5.21)	(5.18)	(10.19)	(10.16)
NONWHITE	-.041	-.035	-.101	-.093
	(5.16)	(4.35)	(11.82)	(10.84)
SELF	.038	.039	.094	-.095
	(2.34)	(2.36)	(5.34)	(5.38)
VET	-.013	--	-.013	--
	(1.86)		(1.79)	
ARMY	--	-.052	--	-.062
		(6.02)		(6.71)
NAVY	--	.018	--	.022
		(1.53)		(1.70)
USAF	--	.009	--	.043
		(0.61)		(3.25)
USMC	--	.034	--	.033
		(2.78)		(1.95)
CONSTANT	4.701	4.704	8.318	8.322
	(152.10)	(152.31)	(252.28)	(252.66)
adj. R^2	.238	.240	.285	.288
No. Obs	23,466	23,466	25,986	25,986

[a]Absolute t-statistics in parentheses; Industry and occupation dummy variables omitted

Table 3

Effect of Skill Transfer
on Post-Service Earnings (Dep. Var. = ANNUAL)[a]

Explanatory Variable	Model 1.	2.	3.
VET	-.020 (2.55)	-.010 (1.01)	-.020 (2.55)
TRANSFER	.050 (3.07)	.059 (3.48)	--
ARMY*TRANSFER	--	--	-.073 (2.79)
NAVY*TRANSFER	--	--	.111 (4.21)
AF*TRANSFER	--	--	.098 (1.80)
MC*TRANSFER	--	--	.134 (4.06)
YRSOUT	--	.053 (28.79)	--
YRSOUT2	--	-.0009 (17.16)	--

[a]Absolute t-statistics in parentheses

Table 4

Regression Estimates for Whites and Nonwhites[a]
(DEP. VAR. = ANNUAL)

Explanatory Variable	Sample 1. Nonwhites	2. Whites	3. Nonwhites	4. Whites
CHILD	-.004	.023	-.002	.023
	(0.62)	(7.02)	(0.38)	(7.15)
EDUC	.064	.057	.062	.057
	(11.94)	(24.81)	(11.60)	(24.68)
EXP	.051	.055	.051	.055
	(12.48)	(32.75)	(12.55)	(32.82)
EXP2	-.0007	-.0009	-.0007	-.0009
	(6.79)	(20.63)	(6.85)	(20.63)
MARRIED	.114	.086	.114	.085
	(5.32)	(8.64)	(5.36)	(8.58)
SELF	.058	.100	.058	.101
	(1.00)	(5.76)	(1.01)	(5.78)
VET	.018	-.024	--	--
	(0.96)	(2.95)		
ARMY	--	--	-.044	-.065
			(2.12)	(6.36)
NAVY	--	--	.094	.006
			(2.44)	(0.48)
USAF	--	--	.132	.019
			(3.62)	(1.41)
USMC	--	--	.142	-.003
			(3.52)	(0.20)
CONSTANT	8.124	8.355	8.143	8.358
	(99.39)	(240.89)	(99.70)	(241.14)
adj. R^2	.189	.323	.194	.324
No. Obs	6,423	19,618	6,423	19,618

[a]Absolute t-statistics in parentheses

Table 5

Effect of Skill Transfer on Nonwhites[a]

Explanatory Variable	Annual Income Models		
	1.	2.	3.
VET	.019 (0.99)	.020 (1.01)	.032 (1.55)
TRANSFER	-.009 (0.23)	--	.020 (0.52)
ARMY*TRANSFER	--	-.120 (2.33)	--
NAVY*TRANSFER	--	.008 (0.10)	--
AF*TRANSFER	--	.188 (2.16)	--
MC*TRANSFER	--	.181 (1.56)	--
YRSOUT	--	--	.032 (5.55)
YRSOUT2	--	--	-.0008 (4.45)

[a]Absolute t-statistics in parentheses; sample size = 6,423

Table 6

Effect of Skill Transfer on Whites[a]

Explanatory Variable	Annual Income Models		
	1.	2.	3.
VET	-.033 (3.96)	-.033 (3.97)	-.023 (2.55)
TRANSFER	.072 (4.09)	--	.076 (4.35)
ARMY*TRANSFER	--	-.046 (1.51)	--
NAVY*TRANSFER	--	.132 (5.03)	--
AF*TRANSFER	--	.118 (3.46)	--
MC*TRANSFER	--	.054 (0.89)	--
YRSOUT	--	--	.021 (7.99)
YRSOUT2	--	--	-.0004 (5.74)

[a]Absolute t-statistics in parentheses; sample size = 19,618

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